

REMARKS

The Office Action, mailed November 2, 2006, considered and rejected claims 1-30. Claims 1, 2, 9, 13, 16, 19, 23, 25, 26, 29 and 30 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Short* ("Building XML Web Services for the Microsoft®.NET Platform") in view of *Shiran* ("Extending a Class to a Web Service"). The remaining claims (i.e. claims 3-8, 10-12, 14, 15, 17, 18, 20-22, 24, 27 and 28) were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Short* and *Shiran* in combination with one or more of *Thomas* (U.S. Publ. No. 2001/0034743), *Pabla* (U.S. Publ. No. 2004/0162871), *Tan* (U.S. Publ. No. 2003/0233360), *Frankel* (U.S. Patent No. 5,392,448), *Matsushima* (U.S. Publ. No. 2004/0267808), *Haswell* (U.S. Publ. No. 2005/0193269), and *Crowe* (U.S. Publ. No. 2002/0035559).¹

By this paper, claims 1, 9, 16, 19 and 26 are amended and claim 29 cancelled.² Accordingly, following this amendment, claims 1-28 and 30 are pending, of which claims 1, 9 and 19 are the only independent claims at issue.

As reflected in the above claim listing, Applicant's invention is generally directed to computer readable media and Web services which are configured to discover Web services using a database directory of Web services. As reflected in independent claim 1, for example, a computer readable medium includes computer-executable instructions that cause a client on a computer network to use a Web service to access, via a server, a directory database of Web services available on a network. The computer executable instructions cause the client to receive a description document from the server which describes a Web service which interacts with the server to discover other Web services on a database directory of Web services, and in which the description document includes class definitions for a generic object class, object type classes derived from the generic object class which correspond to a type of object in the database directory of Web services, a Web service class that includes multiple database operation methods which are configured to operate on instances of database objects within the database directory of Web services, and a flag statement identifying an object class. The computer-executable

¹ Although the prior art status and some of the assertions made with regard to the cited art are not being challenged at this time, Applicant reserves the right to challenge the prior art status and assertions made with regard to the cited art at any appropriate time in the future, should the need arise, such as, for example in response to a subsequent amendment or during prosecution of a related application.

² Support for the claim amendments can be found throughout the original application, including at least the teachings in paragraphs [0003]-[0007], [0019] and [0030] of the originally filed application (paragraph numbering according to U.S. Publ. No. 2005/0015375).

instructions further cause the client to generate a database access request message for performing a database operation on the database directory of Web services and includes determining whether the object type is the type identified by the flag statement and, if so, creating an object of the selected type using the class definition, generating a database operation method for the selected type, and serializing the created object of the selected type and including it in a request message.

Independent claims 9 and 19 generally correspond to the computer-readable medium of claim 1 except that they are recited from the perspective of the server (claim 9) and from the perspective of the Web service (claim 19).

While *Short* and *Shiran* generally relate to Web services which use the Microsoft.NET platform, Applicant submits that they fail to disclose or suggest each of the limitations of the independent claims. For example, among other things, they fail to disclose or suggest wherein a description document describes a Web service which interacts with a server to discover other Web services listed in a database directory of Web services, as recited in combination with the other claim elements.

In particular, *Short* discloses various examples of Web services that may be used to implement different methods. For instance, *Short* describes WSDL document which defines elements for a calculator, including *Add* and *Subtract* methods, in which the corresponding operation is performed on integers received by the Web service. (Chapter 5, Sections 1 and 2).

Additionally, *Short* describes a Web method which accepts a purchase order. For example, the body of a SOAP message includes an instance of a *PurchaseOrder* XML data type and an *AcceptPO* method can be implemented accept the purchase order submitted in the SOAP message, and presumably to store the purchase order in some sort of database. (Chapter 7, Section 6).

Accordingly, *Short* appears to disclose a Web service in which methods accept data and act on it without database interaction (e.g., the calculator Web service), and a Web service in which a purchase order corresponding to a particular data type is stored in a database (e.g., the *AcceptPO* method). *Short* fails, however, to disclose that either such Web service is used to discover other Web services accessible on a network or that a description document is received for describing a Web service configured to discover other Web services listed in a database directory of Web services, as recited in combination with the other claim elements.

In fact, the only mention of discovering Web services that Applicant has found in *Short* cursorily notes that discovery of Web services is facilitated by using a centralized directory or ad hoc methods. (Chapter 1, Section1, ll. 4-7). In particular, two discovery and advertisement mechanisms, namely UDDI and DISCO may be used to advertise and discover created Web services. (Chapter 1, Section 2, Part 5 "Choosing Discovery Mechanisms"). As noted in *Short*, UDDI and DISCO are ways to advertise a Web service where UDDI is an industry-standard centralized directory service allowing users to search for Web services using various types of search criteria, while DISCO defines a simple protocol for hyperlink style locating resources. (*Id.*)³

Thus, *Short* discloses that UDDI and DISCO may be used to advertise and discover Web services such as those disclosed by the reference. *Short* fails, however, and despite expressly considering the need for discovery of Web services, to disclose or suggest that a Web service, and its corresponding description document be implemented and created for discovering Web services from the directory database. In other words, *Short* appears to describe a database directory for finding Web services using UDDI or DISCO, but fails to disclose a Web service for discovering other Web services from such a database directory, as claimed in combination with the other claim elements.

Applicant respectfully submits that *Shiran* fails to remedy the deficiencies of *Short*. In particular, *Shiran* consists of a single page directed to extending/deriving a class to a Web service. *Shiran* has no discussion of any type directed to discovering Web services, let alone a description document which describes a Web service for discovering other Web services on a database directory of Web services, as claimed in combination with the other claim elements.

For at least the foregoing reasons, Applicant respectfully submits that the rejections and assertions of record with respect to the independent and dependent claims are now moot, and therefore need not be addressed individually. However, in this regard, it should be appreciated that Applicant does not necessarily acquiesce to any assertions in the Office Action that are not

³ Applicant notes that Chapter 9, which is cited by the Office in the rejection of dependent claim 29, is entitled "Discovery Mechanisms for Web Services" and appears to also be directed to discovery of Web services. Nevertheless, the Office has not provided Applicant with Chapter 9 of *Short* for consideration, and Applicant has received portions of Chapters 1, 5, 6, 7 and 11 from the Office for consideration. Moreover, inasmuch as claims 1, 9 and 19 have been amended to incorporate portions of claim 29, for which the apparently relevant sections of *Short* have not been provided, Applicant respectfully submits that any subsequent Action should be non-final.

specifically addressed above, and hereby reserves the right to challenge those assertions at any appropriate time in the future, should the need arise, including any official notice.

For at least the foregoing reasons, Applicant submits that the pending claims are neither anticipated nor made obvious by the art of record. In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney.

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Respectfully submitted,



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